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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,079	03/02/2004	Brad Geving	USA.342-1	2949

7590

05/31/2005

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EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,079

Applicant(s)

GEVING ET AL.

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-15,32 and 34-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-15, 32 and 34-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Upon further consideration, claims that were indicated allowable in previously office action are rejected over art of record as follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1- 7 and 9-11, 32, 34-43, 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (US 4,554,218 art of record).

Gardner et al discloses a powder mixture for forming molded composite articles comprising 70 grams tungsten powder, 930 grams powdered A6 tool steel and 57 grams polymer binder which is equivalent powder mixture containing 6.6 wt.% tungsten, 88 wt.% A6 tool steel and 5.4 wt.% polymer binder, (col. 16, lines 50-60). As for the binder Gardner et al teaches utilizing thermoplastic-thermoset binder mixture, which contains 29.6 parts bisphenol A epoxy resin, col. 8, lines 62-66. Gardner et al therefore teaches using "a polymeric binder" having the claimed weight percentage (5.4 wt% x 0.296).

While the amount of steel taught does not overlap that is claimed by the applicants, 88% vs. 88.75%, however it has been established that a prima facie case of obvious exists where the claimed ranges and the prior art ranges do not overlap but are

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closed enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 779 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

Regarding claims 2-4 and 37-39, Gardner et al discloses employing second metal, i.e. steel having mean diameter of from 1 to 100 microns, col. 7, lines 4, lines 8.

Regarding claims 5 and the limitation of spherical steel alloy of claim 36, Gardner et al teaches the second metal can be irregular or regular shaped particle (col. 7, lines 4-6). Note that regular shaped particle broadly includes the spherical shape claimed by the applicant.

Regarding claims 6-7 and 40-41, Gardner et al teaches employing first metal, i.e. high melting metal, having particle size preferably about 1-44 microns.

As for the amount of high melting temperature fine particulate comprising about 8 weight percent of the powder blend, in claims 9 and 42, although Gardner et al teaches employing 6.6 wt.%, the difference in a small amount will not support the patentability of the subject matter encompassed by the prior art unless there is evidence indicating such amount is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation.” See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d (Fed.cir), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore,

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the specification contains no disclosure of either the critical nature of the claimed amount or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in the claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d, 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

Regarding claims 35 and 51 while Gardner et al does not specifically teach using mild steel alloy as the steel alloy, however it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize any steel alloy known in the art including the claimed mild steel alloy as the ferroalloy taught by Gardner et al to form a blend powder, absence unexpected result.

4. Claims 12-13, 32, 45-46, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al in view of Bray et al. (US 6,048,379)

Gardner et al discloses the claimed powder blend substantially as claimed. The difference between Gardner et al and the applicant is that Gardner et al does not teach using nylon as the polymeric binder as recited in claims 12-13 and 45-46 and tungsten carbide as the high melting temperature metal as recited in claims 32 and 49.

Regarding claims 12-13 and 45-46, Bray et al. discloses employing nylon of the type claimed by the applicant to binder tungsten powder and stainless steel fiber, col. 2, line 65 to col. 3, line 15.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the polymer binder of Gardner with the nylon of the

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type taught and known by Bray in the powder blend of Gardner since utilizing such binder as taught by Bray can be used to bind the metal powder of Gardner et al.

Regarding claims 32 and 49, while Gardner et al does not specifically teach employing tungsten containing material such as tungsten carbide as the high melting temperature, Bray teaches tungsten or tungsten carbide can be used in the powder blend, col. 7, lines 12-15. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute tungsten carbide for tungsten in the powder blend of Gardner et al. since it is known that it can be used in placed of tungsten as taught by Bray.

5. Claims 14-15 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al in view of Luk. (us patent 5,782,954)

Gardner et al discloses the claimed powder blend substantially as claimed. The difference between Gardner et al and the applicant is that Gardner et al does not teach employing flowing agent, which is fumed silica.

Luk teaches employing flowing agent such as silica, which is commercially available as the Aerosil line of silicon dioxides, which is a trade name for fumed silica, to enhance the flowability of the powder composition, col. 1, lines 56-65.

Since Luk discloses the claimed flowing agent is conventionally known in the same field of endeavor or the analogous metallurgical art for improving the powder flowability Therefore, combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of


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performance of ordinary skill artisan. In re Castner, 186 USPQ 2 13 (2 I 7). The use of conventional materials to perform their known functions in a conventional process is obvious. In re Raner, 134 USPQ 343 (CCPA 1962).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoctan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoctan T. Mai
Primary Examiner
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n.m.